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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/708,400	03/01/2004	Takaya Otsuki	18.017-AG	2399
29453	7590	03/21/2006	EXAMINER	
JUDGE PATENT FIRM RIVIERE SHUKUGAWA 3RD FL. 3-1 WAKAMATSU-CHO NISHINOMIYA-SHI, HYOGO, 662-0035 JAPAN			CHANDRAN, BIJU INDIRA	
			ART UNIT	PAPER NUMBER
			2835	
DATE MAILED: 03/21/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/708,400

Applicant(s)

OTSUKI ET AL.

Examiner

Biju Chandran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 01 February 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 2/7/06.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

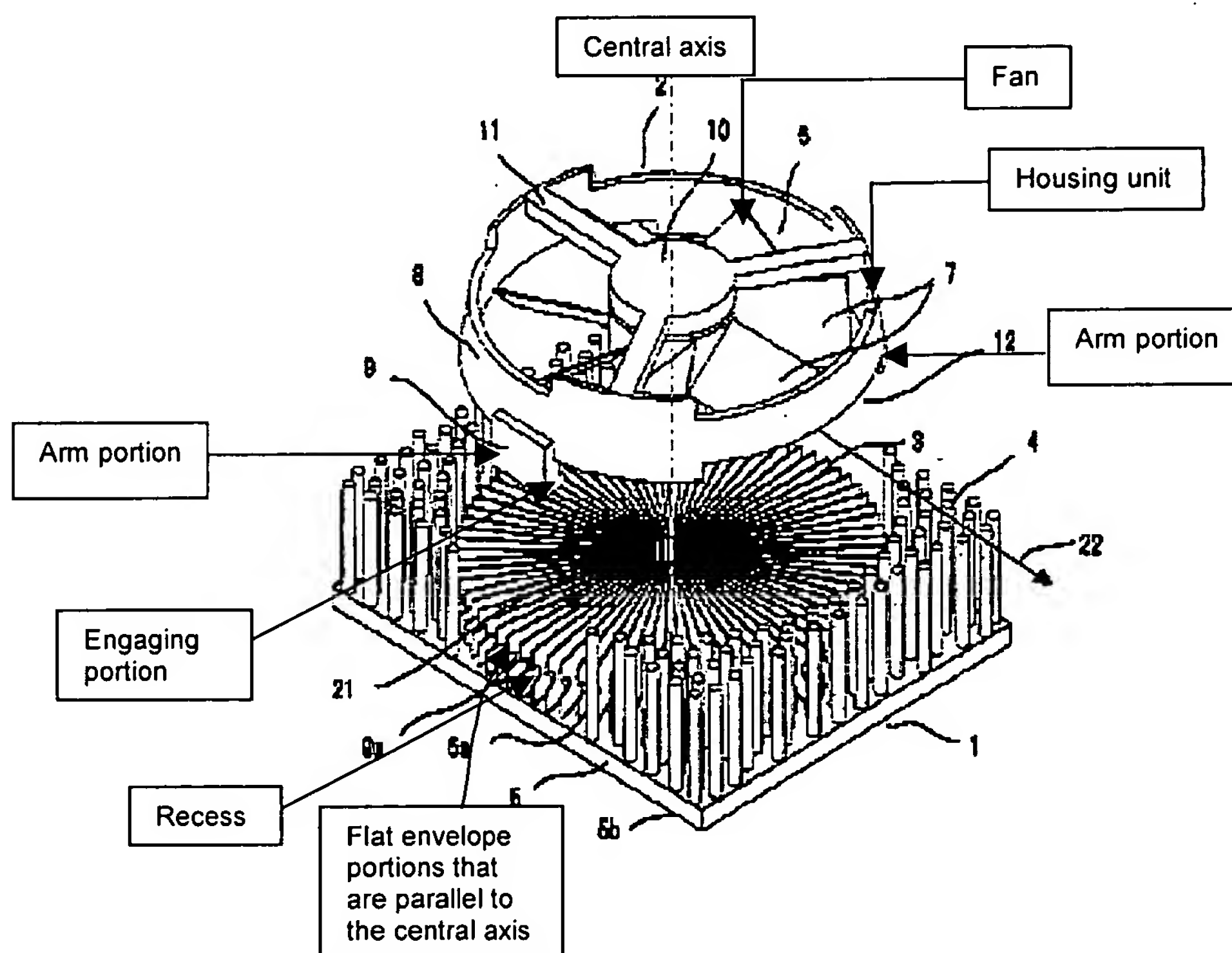
***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

1. Claims 1 and 10 are rejected under 35 U.S.C. 102(a) as being anticipated by Sasa (JP-2003-258473-A).



- Regarding claim 1, Sasa discloses a heat sink fan for cooling a heat generating electrical component, comprising: a heat sink including a base portion with a central axis and a plurality of heat radiating fins integrally or fixedly formed on the side surface of the

base portion, each of the heat radiating fins extending away from the central axis, and having at least one radially distant edge; a fan motor unit including an axial flow fan having a rotational axis, a housing unit connected fixedly with the axial flow fan, the housing unit including a housing and at least one arm portion; wherein the fan motor unit is arranged by the housing unit with the rotational axis is substantially corresponding to the central axis on a first end side of the heat sink, for supplying cooling air to the heat sink; the arm portion extends from the housing towards a second end side of the heat sink; an engaging portion is formed at a tip of the arm portion; and at least one of the heat radiating fins is formed with a distal-edge protrusion or recess, so as to define along the envelope of the heat sink at least one discrete engagement feature for engagement with the engaging portion of the arm portion so that the fan motor unit when attached to the heat sink is restricted in relative movement in the axial direction.

- With respect to claim 10, Sasa discloses a heat sink fan for cooling a heat generating electrical component, comprising: a heat sink including a base portion with a central axis and a plurality of heat radiating fins integrally or fixedly formed on the side surface of the base portion, each of the heat radiating fins extending away from the central axis, and having at least one radially distant edge; a fan

motor unit including an axial flow fan having a rotational axis, a housing unit connected fixedly with the axial flow fan, the housing unit including a housing and a plurality of arm portions; wherein the fan motor unit is arranged by the housing unit with the rotational axis is substantially corresponding to the central axis on a first end side of the heat sink, for supplying cooling air to the heat sink; the plurality of arm portions is extends from the housing towards a second end side of the heat sink; an engaging portion is formed at a tip of each of the arm portions; select ones (the select ones comprise the fins in the group 3 as described in paragraph 0013) of the heat radiating fins are formed with a distal edge protrusion or recess, so as to define along the envelope of the heat sink a plurality of discrete engagement features for engagement with the engaging portion of the plurality of arm portions so that the fan motor unit when attached to the heat sink is restricted in relative movement in the axial direction (marked in figure).

### ***Claim Rejections - 35 USC § 103***

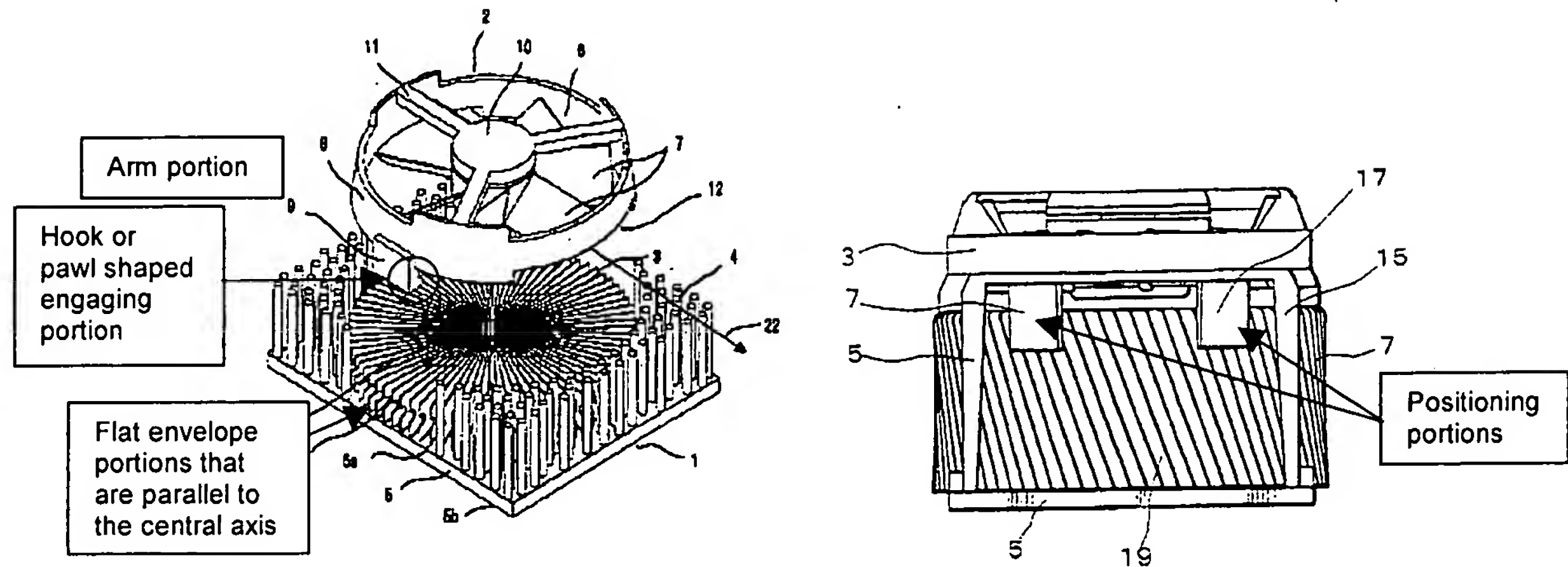
The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sasa. Sasa does not explicitly disclose that the protrusion or recess is formed by a machining process. If the protrusion or recess disclosed by Sasa is not in fact formed by a machining process, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to create the protrusion or recess by machining or manufactured in any known conventional way as a manner of standard assembly. Even though the claim is limited by and defined by the recited process, the determination of patentability of the product is based on the product itself, and does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product in the prior art, the claim is unpatentable even though the prior art was made by a different process. *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985).
3. Claims 3-9, 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sasa in view of Ogawara et al. (US Patent 6,419,007 B1).



- With respect to claim 3, Sasa discloses all the limitations of claim 1. Sasa does not explicitly disclose the fan motor unit additionally having positioning portions extending from the housing towards the second side. Ogawara et al. discloses a heat sink fan for cooling a heat generating electronic component in which the fan motor unit additionally has at least one positioning portion (17) extending from the housing to the second end side of the heat sink, wherein an inner surface of the positioning portion is contacted with a part of an envelope surface of the heat radiating fins (column 7, lines 14-17). At the time the invention was made, it would have been obvious to one of ordinary skill in the art to incorporate the positioning portions as taught by Ogawara et al. in the heat sink cooling fan system as taught by Sasa to prevent the fan motor unit from moving against the heat sink radially (Ogawara et al., column 7, lines 14-17).



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- With respect to claim 4, Sasa further discloses atleast one flat envelope portion formed on the envelope surface of the heat radiating fins, the flat envelope portion being parallel to the central axis and formed by controlling the lengths of a portion of the heat radiating fins in directions away from the central axis (marked in figure).
- With respect to claim 5, Sasa does not explicitly disclose heat radiating fins that are curved in a predetermined direction. Ogawara et al. discloses heat radiating fins that extend radially with being curved in a predetermined direction with respect to the central line. At the time the invention was made, it would have been obvious to one of ordinary skill in the art to incorporate the curved fins as taught by Ogawara et al., in the in the heat sink cooling fan system as taught by Sasa to make use of the increased radiation area of the curved fins (Ogawara et al., column 10, lines 64-67).
- With respect to claim 6, Sasa does not explicitly disclose heat radiating fins that are slanted in a predetermined direction. Ogawara et al. discloses heat radiating fins that extend radially with being slanted in a predetermined direction with respect to the central axis (column 9, lines 10-15). At the time the invention was made, it would have been obvious to one of ordinary skill in the art to incorporate the slanted fins as taught by Ogawara et al., in the in the heat sink cooling fan system



as taught by Sasa to make use of the increased air flow through the fins (Ogawara et al., column 9, lines 39-50).

- With respect to claim 7, Sasa further discloses an engaging portion that is formed like a pawl or a hook extending from the tip of the arm portion toward the central axis (marked in figure).
- With respect to claim 8, Sasa further discloses two or more arm portions extending from the housing to a second end side of the heat sink (marked in figure).
- With respect to claim 9, Sasa as modified by Ogawara et al. discloses all the limitations of claim 8. Ogawara further discloses two or more positioning portion extending from the housing to the second end side of the heat sink (marked in figure).
- With respect to claim 11, Sasa does not explicitly disclose the fan motor unit additionally having positioning portions extending from the housing towards the second side. Ogawara et al. discloses a heat sink fan for cooling a heat generating electronic component wherein the fan motor unit additionally has at least one positioning portion (17) extending from the housing to the second end side of the heat sink, wherein an inner surface of the positioning portion is contacted with a part of an envelope surface of the heat radiating fins (column 7, lines 14-17). At the time the invention was made, it would have been obvious to one of ordinary skill in the art to incorporate the positioning

portions as taught by Ogawara et al. in the heat sink cooling fan system as taught by Sasa to prevent the fan motor unit from moving against the heat sink radially (Ogawara et al., column 7, lines 14-17).

- With respect to claim 12, Ogawara further discloses two or more positioning portion extending from the housing to the second end side of the heat sink (marked in figure).

### ***Response to Arguments***

Applicant's arguments filed on 02/01/06 have been fully considered but they are not persuasive. Described below are the reasons why.

The applicant correctly points out that Sasa discloses that the recess 9a is formed on all the heat radiating fins of the first fin group 3. And, applicant amends claim 1 with the language "at least one of the heat radiating fins is formed with a distal edge protrusion or recess, so as to define along the envelope of the heat sink at least one discrete engagement feature for engagement with the engaging portion of the arm portion", to distinguish the applicant's invention from that of Sasa. However, the claim as worded does not overcome the objection. Sasa discloses that at least one (more than one) of the heat radiating fins have a recess at the distal end, and the recesses of each of the fins are distinct from each other (meeting the quoted definition from the Webster dictionary). It should also be pointed out that the applicant's recess is also made up of individual recesses in a number of adjoining fins.

Applicant amends claim 10 with the language that “select ones of the heat radiating fins are formed with a distal edge protrusion or recess, so as to define along the envelope of the heat sink at least one discrete engagement feature for engagement with the engaging portion of the plurality of arm portions ...”, to distinguish the claim from that of Sasa. However, in this instance also, the claim as worded does not distinguish it over Sasa’s disclosure, since all the fins (as in Sasa) could be the “select ones”. Also, as described earlier, the recesses of Sasa meet the requirement of “discrete” features.

It should additionally be noted that the specification does not recite any requirements (or advantages) for the “select” group of fins with the recesses (10b) not to include all the fins (as shown in the applicants figures). The quoted (in the second half of page 7 of the applicants arguments) considerations of “heat radiating efficiency due to reduction in surface area” and “lower strength” of the fins are not recited in the disclosure.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Chou (US 6,407,919) could also have been used to reject the amended independent and some dependent claims.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

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TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Biju Chandran whose telephone number is (571) 272-5953. The examiner can normally be reached on 8AM - 5PM. Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynn Feild can be reached on (571) 272-2092. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800